Remarks/Arguments:

Claims 1-3 and 5-10 are pending. Claims 1, 9, and 10 are currently amended. Support for the amendments may be found in the specification at, for example, pg. 11, lines 6-9 and pg. 14, line 27 to pg. 15, line 2. No new matter has been added.

Rejection under 35 U.S.C. §112

Claims 1-3 and 5-10 stand rejected under 35 U.S.C. § 112 as failing to comply with the enablement requirement for inclusion of the term "distortion point." The phrase "distortion point" appears in the specification due to a translation error. The phrase "strain point" should have been used. A corrected translation of the PCT application is enclosed. Withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C. §102 and 35 U.S.C. §103

The present invention is directed to a vacuum heat insulator with a core formed of a glass fiber laminated body and an enveloping member covering the core. Due to the claimed features, the invention provides extremely low heat conduction and high heat insulation performance.

Claims 1-3 and 5 10 stand rejected as anticipated under 35 U.S.C. § 102, or, in the alternative, as obvious over Jung (2002/0167105) ("Jung") under 35 U.S.C. § 103. It is respectfully submitted that the claims are patentable over the art of record for the reasons set forth below.

Jung is directed to pressurizing glass white wool. The pressurizing occurs between 110°C below to under 20°C above the strain point of the glass white wool (e.g., a range of from 400°C to 530°C).

Applicant's invention, as recited by claim 1 includes a feature which is neither disclosed nor suggested by the art of record, namely:

> the vacuum heat insulator has a heat conductivity less than or equal to 0.0020 W/mK.

The vacuum heat insulators shown, for example, in Applicant's samples E1 to E5 use no binding material and have heat conductivities in the range of 0.0018 W/mK to 0.0020 W/mK at an average temperature of 24°C. This feature is found in the originally filed application at pg. 22, lines 6-9. No new matter has been added.

Applicant respectfully submits that the difference in the heat conductivity values shows unexpected results. With particular emphasis on the units for heat conductivity, the conversion from kcal/mh°C to W/mK is 1.1622. Jung discloses a thermal conductivity of about 0.0020 kcal/mh°C, which is converted to approximately 0.0023 W/mK. Para. 0021 of the Jung reference. Table 1 of the Jung reference shows thermal conductivities at 0.0023 kcal/mh°C and 0.0022 kcal/mh°C, or approximately **0.00267 W/mK and 0.00255 W/mK**, respectively. Para. 26 of the Jung reference. Conversely, for the claimed invention, Table 1 shows "good" heat conductivities ranging from **0.0018 W/mK to 0.0020 W/mK**. See E1 to E5 beginning at pg. 10, line 15 of Applicant's specification. Thus, the heat conductivities of Jung are higher than the claimed heat conductivities. These differences are significant. Table 1 of the specification shows "high" heat conductivities, e.g., "bad" heat conductivities outside of the claimed invention, for samples containing binding material, such as C1 to C3, at 0.0027 W/mK and higher. See pg. 11, lines 1-5 of the specification. Thus, the vacuum heat insulators in samples E1 to E5 use no binding material and have good heat conductivities of 0.0018 W/mK to 0.0020 W/mK. These vacuum heat insulators have heat insulation performance that is 10 or more times higher than that of a general-purpose rigid polyurethane foam.

It is because the binding region which conventionally works as a thermal cross link does not exist, the number of heat transfer points between the fibers are significantly decreased, and the amount of heat transfer is suppressed. See pg. 4, lines 6-9 of the specification. Applicant includes the feature of the vacuum heat insulator has a heat conductivity less than or equal to 0.0020 W/mK, and the advantages in unexpected results for very low heat conductivity values is evident over the art of record. Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

Claims 2-8 include all the features of claim 1 from which they depend. Thus, claims 2-8 are also patentable over the art of record for the reasons set forth above.

Claim 9, while not identical to claim 1 includes features similar to claim 1. Accordingly, claim 9 is also patentable over the art for the reasons set forth above.

Applicants invention, as recited by claim 10 includes a feature which is neither disclosed nor suggested by the art of record, namely:

> the heat insulation board has a heat conductivity less than or equal to 0.05 W/mK.

This feature is found in the originally filed application at pg. 14, line 27 to pg. 15, line 2. No new matter has been added. The preferred conductivity is less than or equal to 0.05 W/mK for the heat insulation board and has a high heat insulation property. Accordingly, for similar reasons as set forth above for claim 1, claim 10 is patentable over the art of record.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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CEB/ceb/fp

Attachment: Corrected Translation

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